PROPOSED ZERO-EMISSION AIRPORT SHUTTLE REGULATION

February 21, 2019

CALIFORNIA AIR RESOURCES BOARD

Overview

1. Background
2. Proposed Zero-Emission Airport Shuttle regulation
3. Economic Analysis
4. Environmental Analysis
5. Next steps before second hearing

Zero-Emission Airport Shuttle SIP Measure

1. Complement existing programs to achieve NOx and GHG emission reductions through use of zero-emission technology
2. Increase the penetration of the first wave of zero-emission heavy-duty technology

-- *2016 State Strategy for the State Implementation Plan*, *March 2017*

California's Airport Sector is Diverse

Large - 3	• Los Angeles (LAX) • San Diego (SAN) • San Francisco (SFO)
Medium - 6	• Burbank (BUR) • Oakland (OAK) • Ontario (ONT) • Santa Ana (SNA) • Sacramento (SMF) • San Jose (SJC)
Small - 4	• Fresno (FAT) • Long Beach (LGB) • Palm Springs (PSP) • Santa Barbara (SBA)

Airport Shuttles Include Every Class Size

Vehicle Weight Class	Vehicle Type	Number of Vehicles (All Fuels)		
		On-Airport	Off-Airport	Total
Class 2b-3	 Van  Cutaway	3	277	280
Class 4-5	 Cutaway	82	409	491
Class 7-8	 Low-Floor Bus	156	0	156
Class 8	 Articulated Bus	21	0	21
Total		262	686	948

Many Airports Are Adopting Zero-Emission Airport Shuttles

California Airports	On-Airport	Off-Airport
Hollywood Burbank Airport (BUR)		✓
John Wayne Airport (SNA)		✓
Long Beach Airport (LGB)		✓
Los Angeles International Airport (LAX)	✓	✓
Mineta San Jose International Airport (SJC)	✓	✓
Oakland International Airport (OAK)		✓
Ontario International Airport (ONT)	✓	✓
Sacramento International Airport (SMF)	✓	
San Francisco International (SFO)		✓

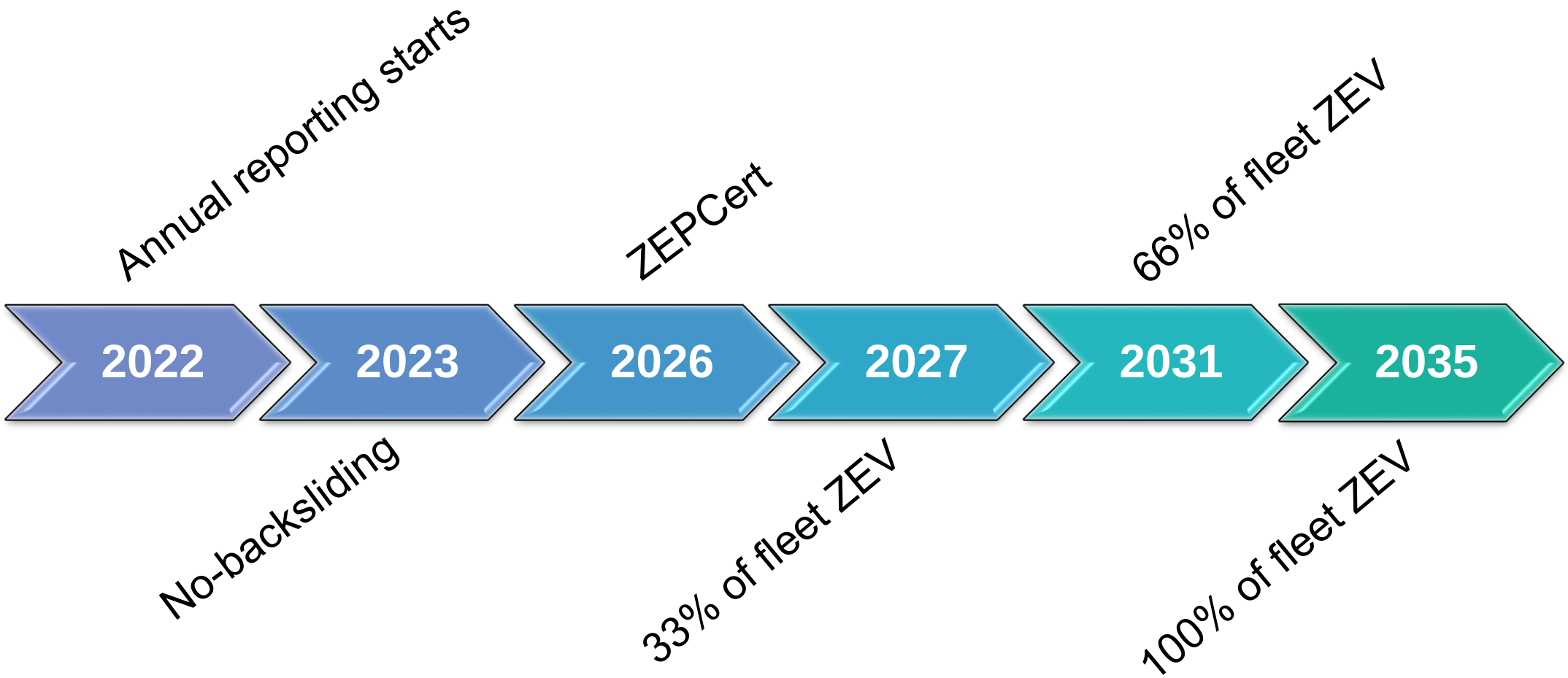
Many Airports Are Adopting Zero-Emission Airport Shuttles

Other US Airports	On-Airport
Hartfield-Jackson Atlanta International Airport (ATL)	✓
Indianapolis International Airport (IND)	✓
John F. Kennedy International Airport (JFK)	✓
Kansas City International Airport (MCI)	✓
LaGuardia Airport (LGA)	✓
Newark Airport (EWR)	✓
Raleigh-Durham Airport (RDU)	✓

ZEV Technology Fits Airport Shuttle Operation

- Operational characteristics:
  - Short, fixed routes
  - Significant miles
  - Stop and go operation
  - Low average speeds
  - Centrally maintained and fueled

Airport Shuttle Proposal: ZEV Transition



Flexibilities Ensure Service Continuity

- Allow shuttles designated as “reserve” to operate up to 3,000 miles per year
- Proposed 15-day change to address emergencies
- Provide fleets ability to apply to EO for a one-time “infrastructure facility” site delay
- Include “compliance extension” consideration by EO for unforeseen, temporary, or extenuating circumstances outside of the fleet’s control
- Exempt transit vehicles subject to the Innovative Clean Transit regulation

Long-Term Savings for Shuttle Operators

- Significant upfront capital costs for shuttle and infrastructure purchases
- Overall cost reductions from 2020 to 2040
  - Statewide cost-reductions of $30 million
  - Includes low carbon fuel standard credits
  - Excludes other incentives
  - Savings outweigh costs by 8th year of operation
- Incentive opportunities can reduce or eliminate early costs

Class 4 Cutaway ZEV Shuttle

Category	Costs Over 12 Year Lifetime
Costs	
ZEV Shuttle (incremental over CNG, in 2027)	$66,600
Infrastructure	$58,000
Electricity	$88,800
Combined Savings (Fuel Savings, Maintenance, LCFS)	($294,000)
Net Savings	($80,600)
HVIP Voucher Amount	*up to $90,000*

Proposal Maintains Opportunity For ZEV Incentives

HVIP	VW	Carl Moyer Program	AB 617 Community Air Protection
Low NO_X engines, ZEVs, advanced technology, & infrastructure	Zero-emission transit, school, & shuttle bus replacements	Up to $80,000/vehicle plus fueling infrastructure	Engine replacement & infrastructure in DAC

FAA Grants	Utility Programs	LCFS
Zero-emission shuttles and charging infrastructure	Charging infrastructure service upgrades and electricity rates (SB 350)	Credits for using low carbon transportation fuels

Environmental Analysis (EA)

- Draft EA Completed
  - Released for 45-day public comment period:

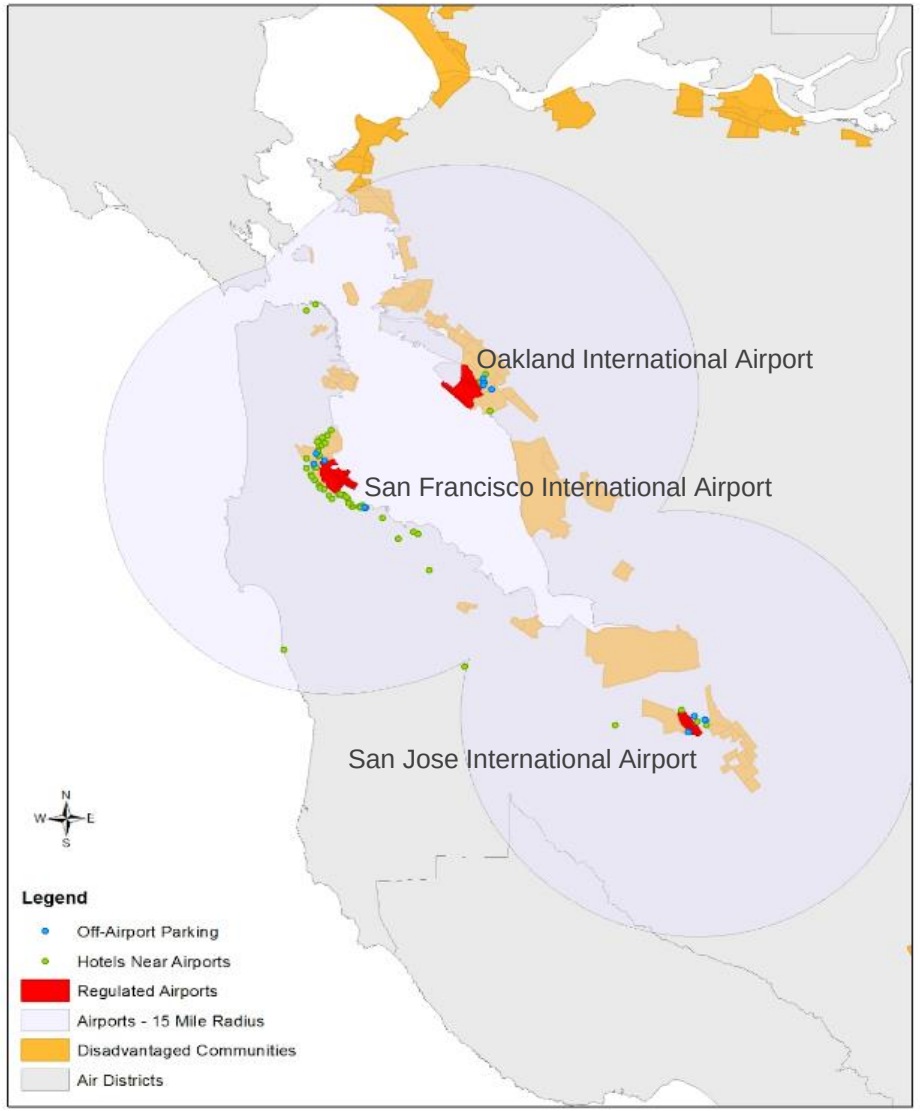
    January 4, 2019 – February 19, 2019
  - Prepare written responses to comments raising significant environmental issues

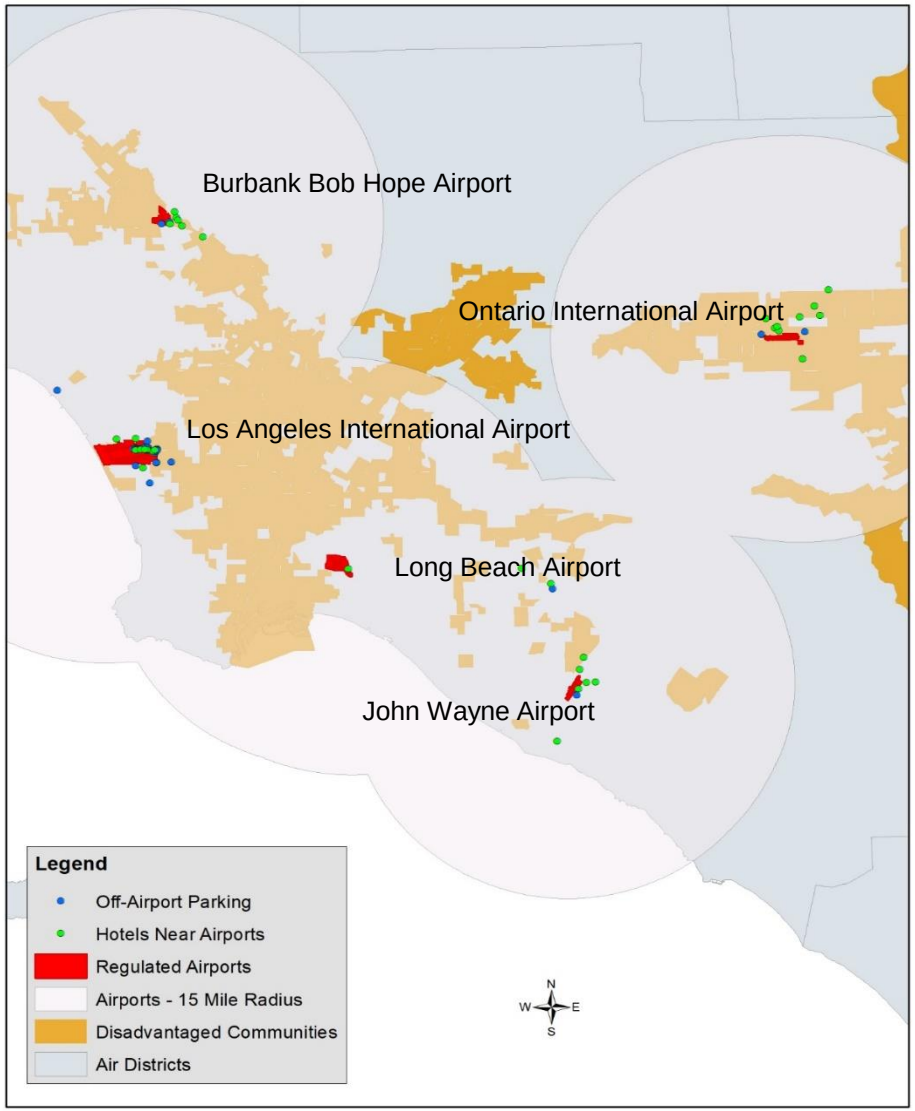
- Early Summer 2019
  - Present Final EA and written responses to comments on Draft EA to Board at the second Board Hearing

Benefits of Proposed Regulation

- Health benefits, especially to communities proximate to airports
  - 138 tons of NOx reduction by 2040
- 90% reduction in GHGs
- Less dependence on petroleum fuels
- Promote the adoption of ZEV technology
- Supports new and enhanced heavy-duty ZEV certification

ZEV Shuttles Provide Benefits To Our Most Impacted Communities





Other Regional and Statewide Efforts

- SCAQMD and basin airports developing MOUs to achieve emission reductions
- SB 1014 will require Transportation Network Companies (Uber/Lyft) to reduce GHGs and transition to ZEVs
- CARB GSE proposal
- Airports' land use planning efforts replacing shuttles with electric rail or public transit

Staff Recommendation

- Adopt resolution directing staff to return with final proposed regulation to ensure ZEV adoption for airport shuttles

- Next Steps
  - Staff's proposed 15-day changes
  - Release for public comments March/April
  - Second hearing anticipated May 2019